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ABSTRACT

This article describes the organization, implementation, and evaluation of a summer reading/study skills program for black and minority students entering three separate health profession schools. The eight-week program was designed to diagnose and correct student academic deficiencies and to introduce students to the rigorous pace and learning environment of medical school. Course work in the basic sciences, clinical exposure, and professional contact were provided through symposiums and workshops. Evaluation tables for the three programs and a bibliography of sources that deal with basic-skill development for minority students are included. (MAI)

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A SUMMER READING/STUDY SKILLS PROGRAM FOR BLACK AND MINORITY HEALTH PROFESSIONS STUDENTS[1]

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One might assume that any student who has progressed far enough to gain acceptance to a medical college has acquired considerable proficiency in the areas of English, reading, and study techniques. Such an assumption is, however, unsubstantiated.

College students have been found to be poor spellers, writers, readers, and to have poor study efficiency (Policastro, 1975; Yale, 1971), and evidence suggests that these deficits in language and study skills persist into medical school (Gindin, 1974; Sheldon, 1948). The need for study skills development becomes even more evident when one recognizes the fact that mastery of concepts in medical school is attained primarily by study done outside of the classroom.

Shatin (1967) administered a study habits inventory to 81 first year medical students at the New Jersey Medical College at mid-year, and obtained a wide range of scores. Fifty per-cent response of acknowledged student deficiencies was taken as a critical point indicating a prominent problem with a particular study habit, and correlations were done with low achievement ranks based on GPA (grade point average). Several problem areas were identified: reading comprehension, identification of important points, concentra-

tion and motivation, overlearning for long term retention, organization of study time, integration of information from various classes, and examination techniques.

Lack of motivation, complaints of time pressures with the great quantity of course material, depressive moods, lack of self-confidence, anxiety, personal problems, and poor work attitudes were also reported in affective responses.

Ambrosino and Brading (1974) discovered in investigations at Albany Medical College that a disturbing percentage of medical students had not developed adequate reading skills as measured by standardized tests, and that reading deficiencies, along with non-productive study habits, apparently played a prominent role in academic failure.

Weinstein (1974) at the University of Washington examined the relationship of achievement (GPA's) and aptitude (Medical College Achievement Test scores) to study skills as measured by Wrenn's Study Habits Inventory. His results indicated that study skills scores were significantly correlated with GPA, although not to MCAT scores, and that the correlation between study skills scores and medical school achievement was significantly higher for freshmen than sophomores. Study skills factors related to the ability to synthesize and organize materials, and selective and critical thinking appeared to be most closely tied to performance in the first two years of medical school.

Institutions across the country have become aware of the need for supplementary programs to counter the relatively low acceptance and high attrition rates of minority students in medical schools. The task of universities has been to correct existing academic deficiencies of students who have been admitted to the medical college. Various programs have been designed which attempt to alleviate or prevent these deficiencies, and assure the success of minority students in their health professions careers.

Poor study habits and their effects on medical study were examined by Sheldon in 1948 at the Syracuse University College of Medicine (Sheldon, 1948). He found the need to develop a course for improving reading comprehension, reading rate, vocabulary, note-taking, report writing, and examination review, but found that transfer of learning was poor unless material directly applicable to medical courses was utilized.

Plagge (1974) describes a program instituted at the University of Illinois in 1969 for matriculating minority medical students with low entrance credentials. The "Medical Opportunities Program" provided a competency-based curriculum in which faculty and upperclass advisors

were employed to evaluate student problems, determine tutorial need, offer advice, and assemble teaching-learning exams. Tutoring by course department personnel, although recommended by advisors, was seldom sought initially by students, and was not responded to well. In 1972, an academic supporting services program was developed to provide seminars on test-taking, anxiety reduction, rapid and remedial reading, and listening and note-taking. Participation in the seminars was not required except for students who did poorly on diagnostic exams which were given 20 times a year. A slow track has also been proposed for students with a need to cover material in twelve months instead of the customary nine, but as of date of publication, had not been instituted.

The University of Hawaii has developed a ten-week summer tutorial program for minorities, which is followed by a reduced academic load and tutoring in the regular curriculum (Gardner, 1972). The need for development of study techniques has been encountered, and methods to provide reinforcement in this area are being developed.

Summer enrichment has, likewise, been advocated at the University of Kentucky Medical College where students participate in workshops which emphasize seminars on the first year's curriculum (Gaines, 1972). The

University has, also, recently instituted a Study Techniques Program (S.T.P.) (Holcomb and Brown, 1972) in which faculty members teach students on a one-to-one basis how to organize and study material, rather than give tutorial assistance in coursework. The students are asked to spend 15 minutes a day on technique application to coursework for the duration of the sessions, which usually consist of eight conference hours over eight weeks.

Four basic areas are emphasized: (1) note-taking; (2) language classification; (3) organization of content; and (4) memorization and recall. One of the objectives, organization of study time, was evaluated for control and experimental groups before and after the program, but no significant differences were found between the two groups. Members of both groups had reduced the amount of time spent in outside study when the second evaluation was given. Personal reports indicated that the S.T.P. facilitated more efficient study in the same amount of time, but such reflections could not be proven statistically. All students felt the course improved their academic performance, with the most helpful techniques indicated as note-taking and content organization, and the least helpful techniques indicated as memorization and preparation for laboratory sessions.

The administrators at Mt. Sinai School of Medicine in New York found a need to institute a program to offset the multiple course failures encountered among its "disadvantaged" students (Margolis and Marshall, 1974). The voluntary program, which consists of summer and academic year segments, reinforces the basic sciences with efforts to identify areas of subject weakness, improve study habits, and develop test-taking ability.

Experience derived from the program has led the initiators to conclude that "...disadvantaged students are victims of poor preparation rather than lack of intelligence, and academic deficits can be corrected by programs in the medical school which are only necessary for the first year" (Margolis and Marshall, 1974, p. 861). The results of the program appeared to be very positive, with noticeable reversal of poor academic performance. A follow-up report supports the success of the program, indicating steady improvement of students with low GPA's and MCAT scores (Marshall and Margolis, 1975).

The University of Maryland instituted a summer program in 1968 providing educational experiences to "disadvantaged" college graduates and incoming medical and dental students (Greifinger, 1970; Ramsay, 1973). Carried out basically by upperclass medical students, the six-week

program presented several medical courses with emphasis on integration of information. Diagnosed weaknesses in reading were discussed, and test-taking techniques were examined through student test results. The program was deemed successful in reaching its goals of providing academic reinforcement and supplementing knowledge of those with weak science backgrounds. Although some indicated deficiencies in study skills were not dealt with directly in the program, it was felt that identifying these problems allowed students to handle them more effectively on their own.

The need for supplementary programs has been recognized not only for those students who have matriculated in a medical school, but for those students contemplating or preparing for enrollment. Programs such as that at the Meharry Medical College (Birch and Wolfe, 1975), and the Health Careers Summer Program at Harvard University (Jackson, 1972) have recruited minority students with the hopes of enhancing their chances of being accepted to medical or dental school. These programs aim to motivate and increase the academic preparation of the students, some of which enter with poor science backgrounds. Activities include clinical exposure, summer courses in the sciences, and tutorial assistance during the academic year.

Meharry reported in 1973 an acceptance rate to dental and medical school of 77%, 3 times the average acceptance rate of all students applying to freshman dental classes in the United States, and 2 times the overall U.S. medical acceptance rate.

Encouraging results have also been reported from New Jersey Medical School's "Students for Medicine Program" (Feldman and Burnett, 1973). This program is an attempt to reach students whose educational backgrounds are inconsistent with their ambitions to enter health professions. The eight-week program was staffed by a director, learning skills and science instructors, and upper-class counselors. Services were offered to college graduates with the desire to take introductory medical basic science courses, and to undergraduates who needed review in college level sciences. Both groups participated in field experiences to observe delivery of health care. The great need to improve reading and study skills was met by requiring all students to participate in learning skills courses including reading, note-taking, library science, and scientific vocabulary coordinated with basic science material. Major emphasis was placed on developing speed and comprehension in reading, since experience had led NJMS faculty to conclude

that poor reading ability impairs the chances of success for "disadvantaged" students.

Lea and Farias (1972) reported on an eight-week summer curriculum sponsored in 1971 by the University of North Carolina for minority students not enrolled in health professions schools, but in need of compensatory instruction. The students took 3 science courses, were offered faculty tutorials, and engaged in experiences with patients in health care delivery. In addition, all students participated in a self-instructional study skills program which sought to strengthen medical terminology, organization, written expression, and reading comprehension. Student response to the program was indicated as favorable, particularly to the clinic visits and the study skills course which was later expanded to cover a broader scope.

For the past three summers, the author has designed and taught courses in Reading/Study Skills for Black and minority health professions students in the Philadelphia area. The purpose of this paper is to describe the organization, implementation and evaluation of these courses in Reading/Study Skills.

PROGRAM DESIGN

The courses in Reading/Study Skills have been an integral part of the curriculum of summer recruitment and retention programs at three health professions schools: Hahnemann Medical College, University of Pennsylvania School of Veterinary Medicine and the Pennsylvania College of Podiatric Medicine. The specific features of each school's summer program are included below:

SUMMER ACADEMIC ENRICHMENT PROGRAM - HAHNEMANN MEDICAL COLLEGE (SUMMER 1975, 1976)

The Summer Academic Enrichment Program (SAEP) is designed to enable entering Black and minority students to: (1) learn how to survive the training system; (2) diagnose and correct any potential "success deficiencies," i.e., attitude, reading/study skills efficiency, ability in basic sciences and motivation; (3) form a sense of community through interpersonal problem solving; and (4) familiarize themselves with the pace and rigorous learning environment of medical school. To accomplish these objectives, SAEP students are required to participate in an

eight-week summer program, completing coursework in the basic sciences and reading/study skills, and providing clinical exposure and professional contact through symposiums and workshop sessions.

SUMMER ACADEMIC REINFORCEMENT PROGRAM - PENNSYLVANIA COLLEGE OF PODIATRIC MEDICINE (SUMMER 1975, 1976, 1977)

The Summer Academic Reinforcement Program (SARP) is designed to accomplish the following objectives: (1) to provide the opportunity for the participants to experience a class/study schedule which would permit an early self-assessment of the self-discipline needed to compete successfully; (2) to evaluate existing study habits and, where necessary, to increase reading/study efficiency in a professional school curriculum; (3) to increase memory skills; and (4) to increase test-taking skills. A five-week summer program, including basic science courses in anatomy, physiology and biochemistry, and a course in reading/study skills, is provided. The program is open to all entering Pennsylvania College of Podiatric Medicine (PCPM) students on a volunteer basis. Beginning in Summer 1977, the summer program has been required for certain students who, because of age or a "disadvantaged" background,

could benefit from an opportunity to test and update their study skills in an environment simulating the rigorous schedule and subject matter associated with PCPM. Since its inception in 1975, SARP has had a significant number of White students enrolled in the program.

SUMMER ORIENTATION AND RETENTION PROGRAM -- UNIVERSITY OF PENNSYLVANIA SCHOOL OF VETERINARY MEDICINE (SUMMER 1975,1976)

The Summer Orientation and Retention Program (SOAR) seeks to achieve the following goals: (1) to inform and interest minority students (Black, Spanish and Indian Americans) in the preparation and the opportunities for a career in Veterinary Medicine; (2) to enrich prospective veterinary candidates in their scientific knowledge; and (3) to assist veterinary students enrolled in the University of Pennsylvania School of Veterinary Medicine in successfully completing their training. SOAR aims to provide a learning experience which is demanding as well as supportive and stimulating. The ten-week summer program is voluntary, and provides coursework in the basic sciences, and reading/ study skills, as well as individiual counseling and field trips.

STUDENT CHARACTERISTICS

The continuing controversy over the Bakke case has, unfortunately, led many to conclude that Black and minority students with inferior academic credentials are being admitted to health professions schools in order to fulfill quotas. Mr. Bakke and his supporters argue that Whites are being discriminated against because different standards are being used to admit minority group members who have lower grade-point averages and lower scores on standardized tests.

Traditionally, health professions schools have employed screening and admissions procedures that are based largely on an applicant's grade point average (GPA) and standardized test scores (MCAT, CPAT, DAT, etc.). The higher the GPA and admissions test score, the better the applicant's chances for acceptance into a medical, podiatry, veterinary or dental school. However, there is sufficient evidence to suggest that some students with high GPA's and standardized test scores do not perform well in medical school, while others with much lower "on paper" credentials do quite well.

The academic credentials of the Black and minority

students participating in the SAEP, SARP and SOAR programs described in this paper are competitive with those of the majority population students admitted to each of the three health professions schools. In most cases, the GPA's and standardized test scores of the SAEP, SARP and SOAR students are lower than the mean scores for the entering class as a whole, but recommendations from college teachers and results of interviews by faculty members and alumni of the health professions schools clearly indicate the potential for success on the part of the students. It should also be observed that at each of the three health professions schools, Black and minority students are admitted who have GPA's and standardized test scores far above the mean, while White students are admitted with GPA's and standardized test scores far below the mean. Evidence suggests that SAEP, SARP and SOAR program participants are, in fact, successfully completing the training systems at the respective schools.

DESIGN OF COURSE IN READING/STUDY SKILLS

SESSION 1: Evaluation of reading/study skills efficiency
Applying basic principles of learning
Previewing medical texts, scientific reports, etc. (1)

Session 1 begins with the administration of two Reading/Study Skills Inventories: Brown-Holtzman Survey of Study Habits and Attitudes (1965) and Survey of Reading/Study Efficiency (Christ, 1968). The surveys are scored within twenty-four hours and individual conferences are scheduled with each student to discuss the implications of the results.

Memory improvement is a critical skill for entering health professions students to master. Students are taught to apply eight learning principles in their academic work.[2] These principles are as follows: (1) the principle of motivated interest; (2) the principle of selectivity; (3) the principle of intention to remember;

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[2]See Pauk, W. How to Study in College (Boston: Houghton Mifflin, 1974), pp. 61-75 for an interesting discussion of basic principles of learning.

(4) the principle of the basic background; (5) the principle of meaningful organization; (6) the principle of recitation; (7) the principle of consolidation; and (8) the principle of distributed practice.

The session concludes with a discussion/demonstration of previewing as the first stage in mastery of reading material in medical texts, journal articles, etc.

It should be observed at this point that all reading materials used for demonstration and practice purposes are taken from the texts, lab manuals, etc. used in the basic science courses. The importance of teaching students to utilize efficient reading/study techniques in reading materials actually used in their coursework cannot be over-emphasized.

SESSION 2: Effective listening -- note-taking (2)
Reading and note-taking from material other than textbooks (3)

In Session 2, students are introduced to basic principles of note-taking from listening. The importance of preparing for listening through reviewing or previewing related reading materials, and the importance of using a looseleaf book, so that material can be rearranged for study purposes, are emphasized.

The Cornell System for Taking Notes[3] is introduced as an efficient and effective system of note-taking for lecture situations.

Medical students are often required to take notes from materials other than textbooks. A simple and effective technique for taking notes from library books, or from other material not the student's own to mark in, is discussed and demonstrated.[4]

A final word on note-taking in health professions schools. A common practice at many health professions schools is to subscribe to a Note-Taking Service. A student is usually selected in each course to tape-record the lecture, transcribe and type the notes, and sell the lecture notes to interested students. Many medical students who subscribe to the Note-Taking Service prefer not to take notes during lecture. However, the author stresses to his students the

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[3] See Pauk, W. How to Study in College (Boston: Houghton Mifflin, 1974), pp. 125-134 for a discussion of the Cornell System for Taking Notes.

[4] See Kahn, N. B. "Simple as ABCDE," Journal of Reading, 14 (February 1971), 319-320.

importance of taking notes during lecture. First, note-taking does not interfere with listening. Second, since we know that the bulk of forgetting occurs within a short time after learning ends, it is important for students to consolidate their notes during the first free time after class, or during the evening at the latest. One problem with the Note-Taking Services is that students must sometimes wait for days before they receive the notes. It is stressed, however, that students who can subscribe to the Note-Taking Service do so, for purposes of facilitating the editing of lecture notes recorded during lecture.

SESSION 3: Increasing concentration and motivation (4)
Organizing study time (5)

As Blaine and McArthur (1971), Mitchell (1975) and Kawi (1975) have observed from studying the emotional problems of students, psychological troubles can have a severe adverse effect on concentration and motivation, with resulting academic failure. Because of the inter-relationship of all phases of the summer programs, it is the task of all staff members to listen to and to offer advice or referrals for each student. It has been observed

that individual counseling, peer tutoring and reading/study skills instruction all must be integrated for the total program to be effective.

The course emphasizes that an increase in concentration can be brought about by controlling two basic variables: external distractions and internal distractions.

External distractions can be avoided by maintaining an exclusive area for study with a comfortable but straight chair and all related study materials at hand, providing lighting which eliminates glare, contrasts and flicker and consisting of one direct and one indirect lighting source, and studying in a quiet environment. Although a quiet environment for studying is generally recommended, the effects of noise or music have been found to vary with the individual.

Internal distractions can be overcome by setting purposes for reading, avoiding mental and physical fatigue with proper sleep, diet and exercise, jotting down personal problems unrelated to the learning task, to be dealt with at an appropriate time, and countering daydreaming by implementing basic principles of learning in procedures for note-taking and mastering textbook material.

Students are urged to revive their motivation at each study period by doing the following: (1) setting

short term goals for study for oneself, rather than thinking of how much better one is trying to do than others; (2) considering how the material relates to or explains illness or medical complications encountered by relatives and acquaintances; and (3) considering how the material relates to other course material and outside reading.

Organization of study time is another critical study skill necessary for survival in health professions schools. Students are taught how to make and revise a study schedule[5] and how to use a memo book in order to provide adequate time for study, recreation and other "odd jobs" that need to be accomplished.

SESSION 4: Mastering textbook material (6)
Critical and Creative Reading in Science (7)

A modification of the classic SQ3R technique for mastering textbook material is discussed and demonstrated in Session 4.

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[5]See Morgan, C. T. and Deese, J. How to Study (New York: McGraw-Hill, 1969), pp. 13-21 for an interesting discussion of schedule-making.

Textbooks are utilized in different ways in medical school courses. In most cases, the textbook is used as a supplement to the notes recorded during lecture. Students are rarely required to read entire textbook chapters on a consistent basis. Therefore, emphasis is placed on techniques for annotating texts[6] and for developing succinct outlines of selected material included in the text. Two textbook reading systems result from this discussion: (1) Preview-Question - Read--Reflect- Recite- Annotate- Review and (2) Preview - Question - Read--Reflect- Recite- "Rite"- Review. Some students prefer to use the first approach, resulting in reviewing lecture notes as one process and reviewing textbook material as a second process. Most students, however, prefer to outline selected material from the text on looseleaf paper, integrate the textbook notes with the appropriate lecture notes, and spread the pages so that the original notes (from lecture and textbook) are covered by succeeding pages, leaving only summaries and key words in the left margin showing. The importance of self-recitation and distributed practice is stressed.

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[6] See Seven Reading Strategies (Greenwich, Conn: BRIM, 1974), pp. 52-53 for a sample annotation.

The necessity for the student to evaluate what is read and to see new material in the light of what is already known is emphasized. The habit of reading professional journals and popular magazines which highlight practical applications of scientific theory and the possibility of working with clinicians on a voluntary basis during the basic science phase of the curriculum are discussed.

SESSION 5: Writing patterns and reading/study strategies in science (8)

This Session concentrates on specific writing styles and patterns found within the instructional materials used in the basic science courses in the health professions schools' curricula. It is generally agreed that to improve comprehension in any content area, specific instruction and practice that utilize the instructional materials of a given content area are required for most students. Specific strategies for coping with the following writing patterns in scientific discourse are developed: (1) enumeration; (2) classification; (3) generalization; (4) problem solution; (5) comparison or contrast; and (6)

sequence.[7]

SESSION 6: Preparing for major examinations (9)

Taking objective and essay examinations (10)

A highpoint of the reading/study skills course is the discussion of test-wiseness.[8]

The discussion begins with a consideration of the intellectual, physical and emotional preparation for tests. Emphasis is placed on the importance of spaced review or distributive practice and implementation of the principle of self-recitation in note-taking and textbook reading procedures.

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[7] See Robinson, H. A. Teaching Reading and Study Strategies (Boston: Allyn and Bacon, 1975), pp. 99-126 for discussion of writing patterns and reading/study strategies in science.

[8] Millman, J. and Pauk, W. How to Take Tests (New York: McGraw-Hill, 1970) provides the best discussion of test-taking strategies available.

Students are next administered Form A of a Test of Test-Wiseness, instructed in procedures for identifying cues to correct answers in multiple-choice tests, and administered Form B of the Test of Test-Wiseness.[9]

Effective procedures for answering essay-type questions are discussed in detail. The essay-type test item is not used as frequently as the multiple-choice type test item in the professional schools' curricula; however, most entering health professions students are unaware of the proper procedures for approaching the essay-type test item.

Session 6 concludes by having successful upperclassmen in each of the respective health professions schools drill students in additional techniques and strategies for coping with multiple-choice examination formats unique to each of the respective schools.

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[9] See McPhail, I. P. "A Psycholinguistic Approach to Training Urban High School Students in Test-Taking Strategies" (unpublished Doctor's dissertation, University of Pennsylvania, 1976), Appendix B for examples of instructional procedures for teaching selected Test-Wiseness skills.

SESSION 7: Developing reading versatility (Phrase reading, skimming/scanning on texts) (11)

Most of the SAEP, SARP and SOAR students enter the summer programs with the belief that "speed reading" is the panacea for success in the rigorous training system.

It is first necessary to make the distinction between the goal of "speed reading" and the goal of developing reading versatility. Results of studies by Spache (1962), Taylor (1962) and Witty (1969) are reviewed in order to make clear the absurdity of reading medical texts at 5 or 6,000 wpm.

Some time is spent on developing the technique of phrase reading and reinforcing techniques for skimming/scanning on texts. The importance of sometimes reading a paragraph word-by-word when dealing with difficult concepts or vocabulary, and the need to shift reading rate approaches within the assignment are emphasized.

SESSION 8: Strengthening technical vocabulary (12)

Improving Memory (13)
Final evaluation of reading/study skills and evaluation of course.

Health professions students must be prepared to master a large number of technical terms in a short period

of time. An effective approach to strengthening technical vocabulary involves teaching students to utilize the word-building system, combining Greek and Latin prefixes, suffixes, word-roots and combining forms to build appropriate medical terms, recognize and understand word parts in the daily use of medical terminology and identify new word parts in other medical terms.[10]

The course concludes with a consideration of specific memory devices and systems. These systems and devices include the following: (1) rhymes; (2) numbering; (3) alphabetical order; (4) abbreviation; (5) acrostics; (6) pigeonholing (spatial arrangement); (7) paired associates; and (8) association chains.[11] Specific memory problems encountered in the basic science courses are considered.

The Brown-Holtzman Survey of Study Habits and Attitudes and the Survey of Reading/Study Efficiency are administered as posttest measures. Students also complete an anonymous "Evaluation of Course in Reading/Study Skills" developed by the author.

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[10]Smith, G. L. and Davis, P.E. Quick Medical Terminology (New York: John Wiley & Sons, 1972) is an indispensable reference for strengthening technical vocabulary.

[11]See Weinland, J.D. How to Improve Your Memory (New York: Barnes & Noble, 1957) for an excellent discussion of scientific facts about memory improvement and practical suggestions for memory improvement.

Throughout the course, students receive numerous hand-outs and other useful materials for reinforcement of techniques and strategies. Students also receive continuous individual counseling in reading/study skills.

EVALUATION

READING/STUDY SKILLS INVENTORIES

The results of pretesting SAEP, SARP and SOAR students on the Brown-Holtzman Survey of Study Habits and Attitudes and the Survey of Reading/Study Efficiency indicate problems in the following areas: (1) study management; (2) mastering textbook material; (3) note-taking; (4) test-wiseness; (5) strengthening technical vocabulary; (6) developing reading versatility; and (7) attending to the study task at hand and retaining information long-term.

Comparisons of pre/posttest performance on the reading/study skills inventories indicate improvement in reading/study skills efficiency at the .01 level of significance.[12] These statistical results are consistent for all three summer programs across all three years.

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[12] Study Orientation Raw Score (overall measure of study habits and attitudes) used for comparison purposes on Brown-Holtzman Survey of Study Habits and Attitudes; Total Score (total number of responses that suggest a reading or study problem or other obstacle to efficient learning) used for comparison purposes on Survey of Reading/Study Efficiency.

STUDENT EVALUATION OF COURSE SESSIONS

Table 1 presents student evaluations of the topics covered in the Reading/Study Skills course. The N for all tables is 52; in the case of the SARP program, responses are included for the Black and minority students only.

Insert Table 1 about here

The results indicate consistently high ratings for all topics covered in the course, with the possible exception of Session 5: Writing patterns and reading/study strategies in science.

Table 2 indicates positive evaluative comments on the Reading/Study Skills Course sessions.

Insert Table 2 about here

No responses are indicated for Session 5, suggesting that the material covered on writing patterns and reading/study strategies in science may not have been as helpful to the students as other material.

The reader should note the numbers in parentheses written to the right of specific reading/study techniques on pages 16-28. A total of 13 specific reading/study techniques are indicated. Table 3 presents a tally of the students' application of one or more of these techniques to their reading study approach in the basic science courses.

Insert Table 3 about here

The following techniques appear to be utilized most often by students in the basic science courses: (1) previewing; (2) note-taking from listening; (3) reading and note-taking from material other than textbooks; (4) increasing concentration and motivation; (5) organizing study time; and (6) mastering textbook material. It is

interesting to note that despite the interest in the material on test-wiseness (Session 6), only a few students utilized these approaches in the basic science courses offered in the summer programs. However, informal discussions with several students indicate that the test-wiseness principles are, in fact, being used during the regular academic year.

Table 4 indicates the level of reading/study efficiency experienced by students in the summer programs. The results demonstrate consistent high reading/study efficiency in the basic science courses.

Insert Table 4 about here

CONCLUSIONS AND RECOMMENDATIONS

A brief filed recently by the Association of American Medical Colleges said, "Without special admissions programs it is not unrealistic to assume that minority

enrollments could return to the distressingly low levels of the early 1960's. This would mean a drop from the present level of 8.2 per cent enrollment of underrepresented minorities...to slightly over 2 per cent."

The success of the recruitment and retention programs of the Hahnemann Medical College, the University of Pennsylvania School of Veterinary Medicine, and the Pennsylvania College of Podiatric Medicine is due, in large measure, to the success of the Reading/Study Skills component of the respective summer programs. As such, these recruitment and retention programs prove that talented Black and minority students can succeed in health professions schools and that enrichment programs combining study in the basic sciences, reading/study skills and individual counseling can be of valuable assistance to Black and minority health professions students.

Many students have suggested that the Reading/Study Skills course be given in a "concentrated dose" before the basic science courses begin. This would be impractical, however, since instruction in reading/study skills should always be given in the context of academic coursework to insure transfer of skills to the actual reading/study situation. However, it would be interesting in future summers

to offer the Reading/Study Skills course in the first half of the programs, and to assess the effectiveness of student utilization of improved techniques in the second half of the programs.

Several students have also suggested that the course be made available to interested upperclassmen on an optional basis, and that the author be retained on a consulting basis during the regular academic year.

A follow-up study is planned to assess the relationship of instruction in reading/study skills to achievement in the first two years of health professions schools. To date, only 2 of the 52 students who have participated in the SAEP, SARP or SOAR programs have withdrawn from study for academic reasons.

REFERENCES

Ambrosino, R. J., & Brading, P. L. Reading: A potential source of academic difficulty in medical school. Journal of Reading Behavior, 1974, 6, 367-372.

Birch, J. & Wolfe, S. An enrichment program for minority students. Journal of Medical Education, 1975, 50, 1059-1060.

Blaine, G. & McArthur, C. Emotional problems of the student. New York: Meredith, 1971.

Brown, W. F. & Holtzman, W. H. Brown-Holtzman survey of study habits and attitudes (College Ed.). New York: The Psychological Corp., 1965.

Christ, F. L. Survey of reading/study efficiency. Palo Alto, Calif.: Science Research Associates, 1968.

Entwisle, G. & Entwisle, D. R. Study-skills courses in medical schools. Journal of Medical Education, 1960, 35, 843-847.

Feldman, L. & Burnett, F. Students for medicine: A program for the preparation of the disadvantaged student. Journal of Medical Education, 1973, 48, 945-947.

Gaines, V. Minority recruitment and retention. Journal of Medical Education, 1975, 50, 416-417.

Gardner, K. & Bolman, W. Minority student education at the University of Hawaii School of Medicine. Journal of Medical Education, 1972, 47, 467-472.

Gindin, A. Spelling performance of medical students. Bulletin of the New York Academy of Medicine, 1974, 50, 1120-1121.

Greifinger, R. A summer program in life sciences. Journal of Medical Education, 1970, 42, 620-623.

Holcomb, J. D. & Brown, S. An assessment of a program of study techniques for medical students. Journal of Medical Education, 1972, 47, 285-286.

Jackson, R. The effectiveness of a special program for minority group students. Journal of Medical Education, 1972, 47, 620-624.

Kawi, A. On the learning process in medical students as a symptom and a disease. Diseases of the Nervous System, 1975, 36, 87-90.

Lea, J. & Farias, H. A summer health sciences experience for minority group students. Journal of Medical Education, 1972, 47, 903-904.

Margolis, S. & Marshall, C. A comprehensive retention program for disadvantaged medical students. Journal of the American Medical Association, 1974, 228, 861.

Marshall, C. & Margolis, S. Impact of a retention program for disadvantaged medical students upon the medical school community. Journal of Medical Education, 1975, 50, 805-807.

Mitchell, K. et al. A group program for failing underachievers. Journal of College Student Personnel, 1975, 16, 306-312.

Policastro, M. Note-taking: The key to college success. Journal of Reading, 1975, 18, 372-375.

Plagge, J. Increasing the number of minority enrollees and graduates: A medical opportunities program. Journal of Medical Education, 1974, 49, 735-745.

Ramsay, F. Minority recruitment to medicine. Journal of the National Medical Association, 1973, 65, 497-500.

Shatin, L. Study skills in medical education: A report and analysis. Journal of Medical Education, 1967, 42, 833-849.

Sheldon, W. An evaluation of an experimental reading program for medical students. Journal of Educational Psychology, 1948, 39, 298-303.

Spache, G. D. Is this a breakthrough in reading? Reading Teacher, 1962, 15, 258-263.

Taylor, S. E. An evaluation of forty-one trainees who had recently completed the reading dynamics program. Eleventh Yearbook of the National Reading Conference, 1962, 41-56.

Weinstein, P. & Gipple, C. The relationship of study skills to achievement in the first two years of medical school. Journal of Medical Education, 1974, 49, 902-905.

Witty, P. A. Rate of reading - a crucial issue. Journal of Reading, 1969, 13, 102-106, 154-163.

Yale, S. L. Writing courses for engineers. Improving College and University Teaching, 1971, 19, 60-61.

TABLE 1

STUDENT RATINGS OF READING/STUDY SKILLS

COURSE SESSIONS (N=52)

SESSION NO.	EXCELLENT 1	GOOD 2	FAIR 3	POOR 4	NO RESPONSE 5
1	15	31	5	0	1
2	28	17	6	1	0
3	17	22	11	2	0
4	16	27	9	0	0
5[a]	5	11	8	3	0
6	25	17	9	0	1
7	15	23	8	2	4
8[b]	15	11	7	2	2

[a] Topic not covered in Summer 1975 (N=27).

[b] Topics not covered in SAEP - Summer 1976 (N=37).

TABLE 2

EVALUATIVE COMMENTS ON READING/STUDY SKILLS

COURSE SESSIONS

SESSION NO.	MOST TYPICAL COMMENT (S)
1	"Helpful, valuable"
2	"Session should have been held before classes actually started" "Modified existing techniques" "Needed more practice using 2-inch margin"
3	"Dr. McPhail alone was motivation" "Time was more wisely spent after organization of material"
4	"Most important session" "More time needed" "Valuable" "Excellent ideas pointed out" "Now able to read for a purpose, not just to memorize"
5	No response
6	"Should have come earlier in sessions" "New ideas learned for the future" "Wish ideas had been learned before taking MCAT"
7	"Reinforced existing techniques" "Made for faster reading" "Helpful" "Excellent in preparing for class and extracting after class"
8	"Improved memory skills"

TABLE 3

APPLICATION OF SPECIFIC READING/STUDY TECHNIQUES

TO BASIC SCIENCE COURSES (N=52)

TECHNIQUE NO.	BIOCHEMISTRY	ANATOMY[d]	PHYSIOLOGY	HISTOLOGY[e]
1	20	16	16	19
2	31	12	28	12
3	10	6	10	8
4	12	10	14	9
5	10	8	11	8
6	4	13	14	16
7	5	5	6	5
8[a]	2	2	5	2
9	7	7	7	7
10	5	7	8	6
11	5	8	12	5
12[b]	1	6	2	1
13[c]	5	9	11	6

a Technique not covered in Summer 1975 (N=27)

b,c Techniques not covered in SAEP - Summer 1976 (N=37)

d Anatomy course not offered in SAEP - Summer 1976 (N=37)

e Histology course not offered in SARP - Summer 1977 (N=50)

TABLE 4

READING/STUDY EFFICIENCY IN BASIC SCIENCE COURSES (N=52)

	RATING				
COURSE	E(Excellent)	G(Good)	F(Fair)	P(Poor)	NR (No Response)
BIOCHEMISTRY	9	20	11	6	6
ANATOMY[a]	10	13	9	0	5
PHYSIOLOGY	7	23	15	3	4
HISTOLOGY[b]	10	17	12	1	10

[a] Anatomy course not offered in SAEP - Summer 1976 (N=37)

[b] Histology course not offered in SARP - Summer 1977 (N=50)